

# RAYAGADA AUTONOMOUS COLLEGE

## SECOND SEMESTER INTERNAL ASSESMENT-2017-18

Class : +31<sup>st</sup> year Sc.

Full Marks: 15

Subject : Physics Honours Core III

Time : 45 Minutes

### ELECTRICITY AND MAGNETISM

**Answer any one question.**

1. State and explain Ampere's law. By using it, determine the magnetic field at any point inside a Solenoid.
2. Set up the equation of emf of L-C-R in series with A.c. Solve it to find expression for current in the circuit.
3. Discuss the condition of resonance of an series L-C-R a.c. circuit. Obtain expression for band width and sharpness of resonance.

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# RAYAGADA AUTONOMOUS COLLEGE

## SECOND SEMESTER INTERNAL ASSESMENT-2017-18

Class : +31<sup>st</sup> year Sc.

Full Marks: 15

Subject : Physics Honours Core IV

Time : 45 Minutes

### WAVES AND OPTICS

**Answer any one question.**

Q1. Derive expressions for wave velocity of gravity waves and capillary waves. Hence find their group velocities.

Q2. Explain Stoke's treatment for reflection and refraction. Find the conditions of getting maximum and minimum intensities for a thin parallel transparent film.

Q3. Write notes on

- a) Fermat's principle of optimum path.
- b) Interference by Lyod's single mirror.

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RAYAGADA AUTONOMOUS COLLEGE, RAYAGADA  
2<sup>ND</sup> SEMESTER INTERNAL ASSESMENT 2018  
CHEMISTRY-GE-II

Full mark: 15

Time: 45 Min

Answer the following:

1. (a) State and explain Heisenberg's uncertainty principle. (7.5 marks)  
(b) Give a brief account on de-Broglie's relation (7.5 marks)  
or
2. (a) Write note on inductive effect . (7.5 marks)  
(b) What is meant by Conformational isomerism ? Write about different conformations of Butane (7.5 marks)  
or
3. (a) Write note on decarboxylation reaction and Wurtz reaction. (7.5 marks)  
(b) How will you prepare ethane from i) Acetylene ii) Sodium acetate (7.5 marks)